

LOVAG Registered Laboratory 2014

<u>LOVAG CB</u>	<u>Id Code</u>	<u>Name</u>	<u>Address</u>	<u>Observer</u>
APPLUS+ LGAI LABORATORY (SPAIN)	ES 02	TECNALIA Electrical Equipment Laboratory	Parque Científico y Tecnológico de Bizkaia Laida Bidea. Edificio 413 E-48170 Zamudio (Bizkaia)	Luis Martínez Cancela

LOVAG Scheme Scope

<u>Scope of tests</u>		
<u>Type of tests:</u>	<u>Test description:</u>	<u>Test specifications or limits:</u>
<input checked="" type="checkbox"/> Hight-current tests	<input checked="" type="checkbox"/> Short-circuit switching capacity <input checked="" type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input checked="" type="checkbox"/> Overload switching capacity <input checked="" type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input checked="" type="checkbox"/> Making/breaking capacity <input checked="" type="checkbox"/> AC <input checked="" type="checkbox"/> DC <input checked="" type="checkbox"/> Short-time withstand current <input type="checkbox"/> Impulse withstand current <input checked="" type="checkbox"/> Arc fault withstand capacity	Voltage : 1 000 V Current : 130 kA Voltage : 1 200 V Current : 30 kA Voltage : 1 000 V Current : 20 kA Voltage : 1 200 V Current : 3 kA Voltage : 1 000 V Current : 10 000 A Voltage : 1 200 V Current : 3 000 A Current : 130 kA Time : 1 s Current : -- A Energy : 10 000 kA²s
<input checked="" type="checkbox"/> Insulation tests	<input checked="" type="checkbox"/> High voltage <input checked="" type="checkbox"/> Impulse withstand voltage <input checked="" type="checkbox"/> Leakage current	Voltage : 5 000 V (HV from 5 kV to 550 kV) Voltage : 5 000 V (HV from 5 kV to 600 kV) Current : ≥0,01 mA
<input checked="" type="checkbox"/> Temperature-rise tests	<input checked="" type="checkbox"/> AC / <input checked="" type="checkbox"/> DC max. current <input checked="" type="checkbox"/> Impedance measurement	Current : 12 000 A / Current : 1 000 A ≥0,1 mΩ
<input checked="" type="checkbox"/> Tripping behaviour	<input checked="" type="checkbox"/> AC / <input checked="" type="checkbox"/> DC max. current	Current : 12 000 A / Current : 1 000 A
<input checked="" type="checkbox"/> Lifespan	<input checked="" type="checkbox"/> Mechanical lifespan <input checked="" type="checkbox"/> Electrical durability: <input checked="" type="checkbox"/> AC <input checked="" type="checkbox"/> DC	Voltage : 1 000 V Current : 10 000 A Voltage : 1 200 V Current : 3 000 A
<input checked="" type="checkbox"/> Mechanical properties of terminals		
<input checked="" type="checkbox"/> EMC tests		
<input checked="" type="checkbox"/> Climatic tests		
<input checked="" type="checkbox"/> Vibration and shock tests		
<input checked="" type="checkbox"/> Degree of protection tests	<input checked="" type="checkbox"/> IP-code (water and solid bodies) <input checked="" type="checkbox"/> IK-code (impact resistance of enclosures)	IP1X to IP6X. IPX1 to IPX8 (not IPX9) IK02 to IK10

<u>Standards</u>			
	<u>Category</u>	<u>Standards</u>	<u>Description</u>
<input checked="" type="checkbox"/>	POW	IEC/EN 60947-1	Low-voltage switchgear and controlgear
<input checked="" type="checkbox"/>	POW	IEC/EN 60947-2	Circuit-breakers
<input checked="" type="checkbox"/>	POW	IEC/EN 60947-3	Switches, disconnectors, switch-disconnectors and fuse-combination units
<input checked="" type="checkbox"/>	POW	IEC/EN 60947-4-1	Electromechanical contactors and motor starters
<input checked="" type="checkbox"/>	POW	IEC/EN 60947-5-1	Auxiliary Switch
<input checked="" type="checkbox"/>	POW	IEC/EN 60439-1 IEC/EN 61439-1 & IEC/EN 61439-2	Low-voltage switchgear and controlgear assemblies Part 2: Power switchgear and controlgear assemblies
<input checked="" type="checkbox"/>	POW	IEC/EN 61439-1 & IEC/EN 61439-6	Low-voltage switchgear and controlgear assemblies Part 6: Busbar trunking systems (busways)